



## Understanding Your Historic Building

# Maintenance 101

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Maine Preservation

# Housekeeping

- Feel free to have your video camera on or off – if your connection is unstable, turning it off may help
- Please be on mute when not speaking
- You can ask questions using the chat feature or wait until Q&A pauses and then unmute and ask it!

“The main principle behind a maintenance program is to control what happens to your building rather than to react to its deterioration”

John Leeke



- Leeke, John, "Maintenance Programming Manual for Historic Buildings" (1990). Maine Historic Preservation Commission. 2.

# Planning for Maintenance

- Understanding your historic house – know your materials and potential condition issues
- Understand how your house's parts work together
- Inspecting the house – initial assessment
- Forms for recording work with written procedures for appropriate care of specific materials, including housekeeping, routine care, and preventive measures
- Identify items you can appropriately inspect yourself
- Identify items you may need professional assistance to properly inspect
- Determine how often to inspect each element
- A set of base-line photographs to be augmented over time
- Schedules and checklists for inspections
- Forms for recording work, blank base plans and elevations to be filled in during inspections and upon completion of work
- Record-keeping sections for work completed, trusted contractors, costs, warranty cards, sample paint colors, and other pertinent material.
- Prioritization for maintenance, improvements & repairs
- Establish a maintenance plan
- Execute on plan



# National Park Service Preservation Brief 47

## Inspection Frequency Chart

INSPECTION FREQUENCY CHART

Feature	Minimum Inspection Frequency	Season
Roof	Annually	Spring or fall; every 5 years by roofer
Chimneys	Annually	Fall, prior to heating season; every 5 years by mason
Roof Drainage	6 months; more frequently as needed	Before and after wet season, during heavy rain
Exterior Walls and Porches	Annually	Spring, prior to summer/fall painting season
Windows	Annually	Spring, prior to summer/fall painting season
Foundation and Grade	Annually	Spring or during wet season
Building Perimeter	Annually	Winter, after leaves have dropped off trees
Entryways	Annually; heavily used entries may merit greater frequency	Spring, prior to summer/fall painting season
Doors	6 months; heavily used entry doors may merit greater frequency	Spring and fall; prior to heating/cooling seasons
Attic	4 months, or after a major storm	Before, during and after wet season
Basement/Crawlspace	4 months, or after a major storm	Before, during and after rain season

# How to Inspect Your House

- Start the inspection from ground level, using binoculars for areas above the first floor
- Adopt a systematic approach.
- Record your observations using a sample checklist
- RECOMMENDED EQUIPMENT
  - Camera
  - Notebook
  - Extension Ladder
  - Binoculars
  - Flashlight
  - Scratch awl or pocketknife and small mallet or hammer for checking the soundness of materials



# Exterior

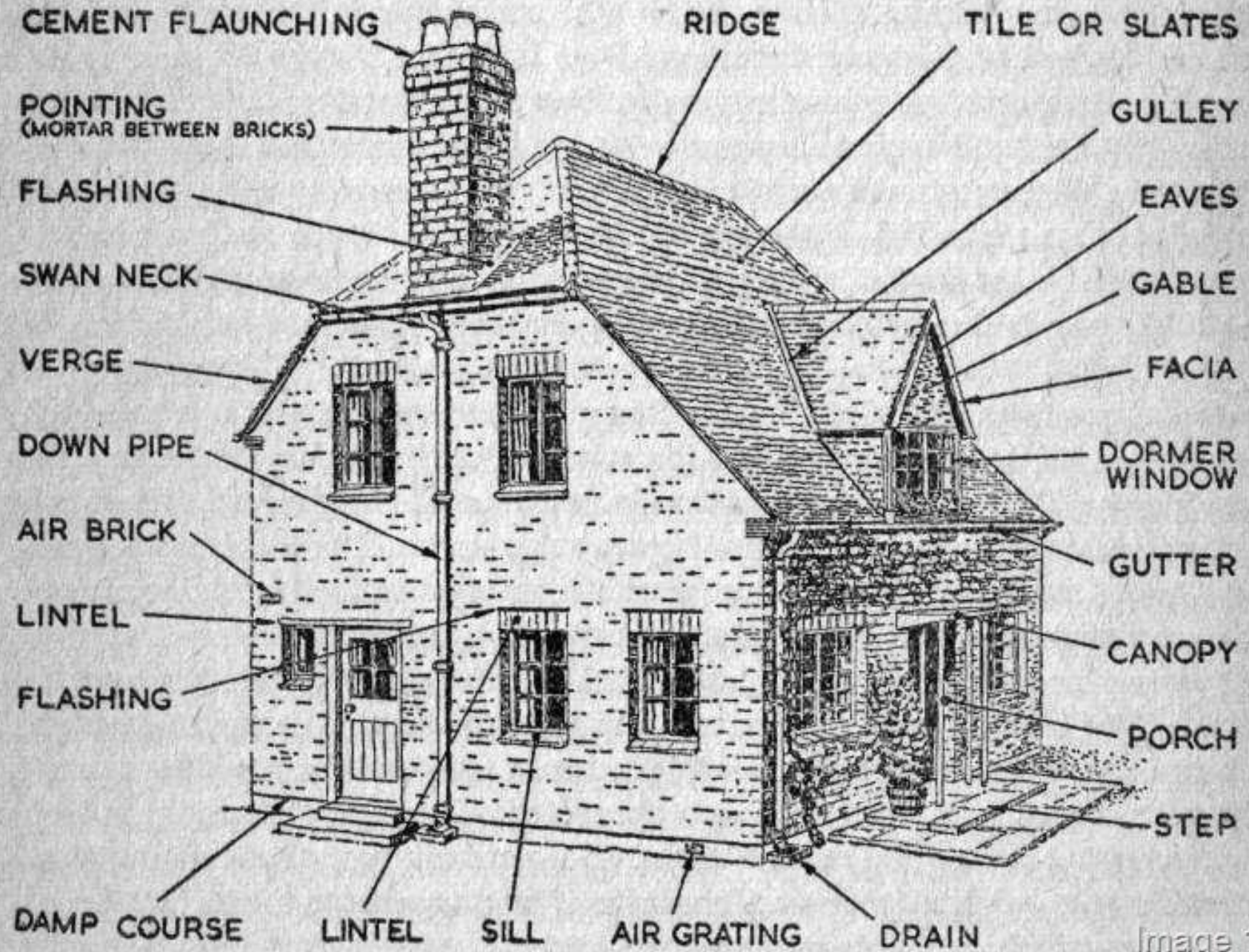


Image 1

# Importance of Sound Roof

- Single most important aspect of the home
- All parts must work together properly
- Poorly maintained roof will affect every other building component
- Missing shingles create the opportunity for more loss
- Leaks lead to deterioration of structural and decorative elements
  - The smallest drip over time will add up to significant water damage
- Insects and fungi thrive in moist dark environments





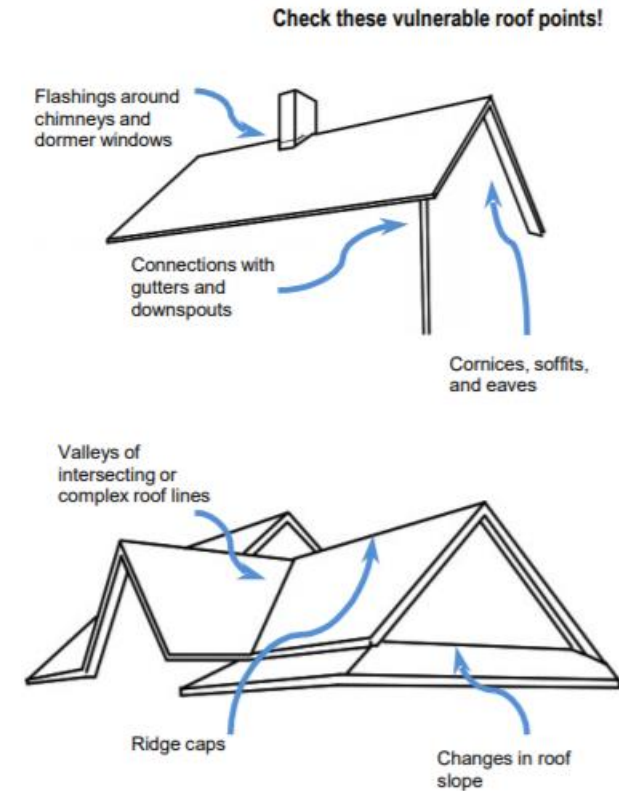
# Roof Maintenance – What to Look For

- Shingles
  - Small holes or cracking slate shingles
  - Curled or warped asphalt shingles
  - Missing, torn, cracked, or slipped shingles
  - Popped nails
  - Buckling
  - Rotted wood shingles
  - Thin, worn granule coatings
  - Algae, moss, or mold growth
  - Staining and discoloration
- Dislodged ridge tiles
- Ice buildup
- Roof structure
  - Damp spots or stains on interior surfaces
  - Loose or deteriorated flashing around chimney, valleys, or ridges
  - Cracks in roof membrane
  - Interior condensation, discoloration, watermarks, decaying wood
  - Sagging roofline or decking



# Roof Maintenance

- Inspect at least 1x a year in spring (2x spring and fall better)
- Allow for proper attic ventilation
- Remove growth and debris – don't power wash ever
- Cut back trees
- Monitor for leaks, damp areas, and stains
- Proper maintenance approaches for different materials
  - asphalt
  - Metal
  - Cedar
  - Slate
  - EPDM/BUR/membrane/etc.



# Chimney Deterioration

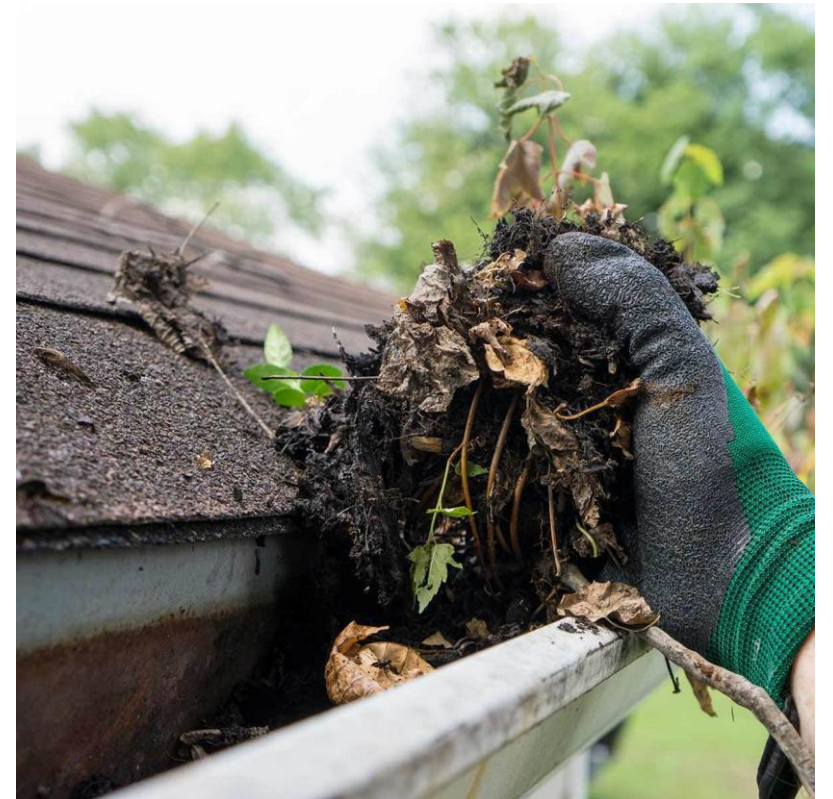
- Spalling (delaminating, flaking or breaking away of finished masonry surface)
- Loose, cracked, or dislodged masonry
- Mortar that has softened, cracked or broken
- Leaning chimneys
- Signs of water infiltration in attics or on interior ceilings
- Wildlife: bats, birds, squirrels, insects
- Check and maintain flashings
- Earthquakes!





# Gutters & Downspouts

- Gutters and Downspouts
- Water, wind, and lack of maintenance result in problems.
- Gutters and downspouts can fill with leaves, pine needles and debris. Clogged gutters do not drain properly and may cause moisture problems in basements
- In winter ice dams can be very damaging to both the gutters and roofs
- Gutters should be cleaned and inspected Fall and Spring
- Overhanging trees and branches pruned back away from roofs and gutters



# Exterior Walls



- Why it matters. Second line of defense
- What to look for
- Identify areas where water can get into or through the wall. Check for soft or rotting wood and failed paint. Your pocketknife comes in handy here
- Pay close attention to butt ends of siding, corner boards etc. Anywhere water may not drain well
- Keep trees and shrubs pruned back at least 2'
- Be aware of light and airflow. Shady areas may degrade faster as will areas in harsh sun
- Routine maintenance:
  - Cleaning – hose it down. Low pressure only! 3500psi is unnecessary and destructive!
  - Use a carwash brush on your house to gently scrub
  - Use a gentle cleaning solution to remove dirt and grime. Dilute detergent wash. Bleach only with caution! Bleach is very caustic and can damage metal, masonry and prematurely fade your paint.
  - While cleaning look for mildew
  - Tough areas of mold and mildew can be cleaned with either enzymatic or peroxide based cleaners

# Exterior Walls

- Caulking and sealing open joints and seams
- Openings will allow moisture, water, drafts and insects to creep into your house.
- Caulking dries out over time, so don't be surprised to find yourself caulking each year.
- Caulking is a simple process that you can perform using a caulking gun and a putty knife.
- Make sure you are using the right kind of caulk for what you are sealing. Not all caulk is the same.
- As with paint and putty, don't caulk bare wood. Prime first.



# Exterior Paint

- Why does paint fail?
  - Inadequate surface prep
  - Incorrect application
  - Poor painting conditions
  - Moisture issues
  - Cheap product
- Cracking & flaking = paint hard & brittle with age – over time moisture can penetrate / cracking down to bare wood = moisture in wood under the paint
- Alligatoring
- Blistering & wrinkling – moisture trapped under the paint surface or improper drying of previous coats
- Peeling – improper surface prep – incompatible paint layers
- Paint or Stain?



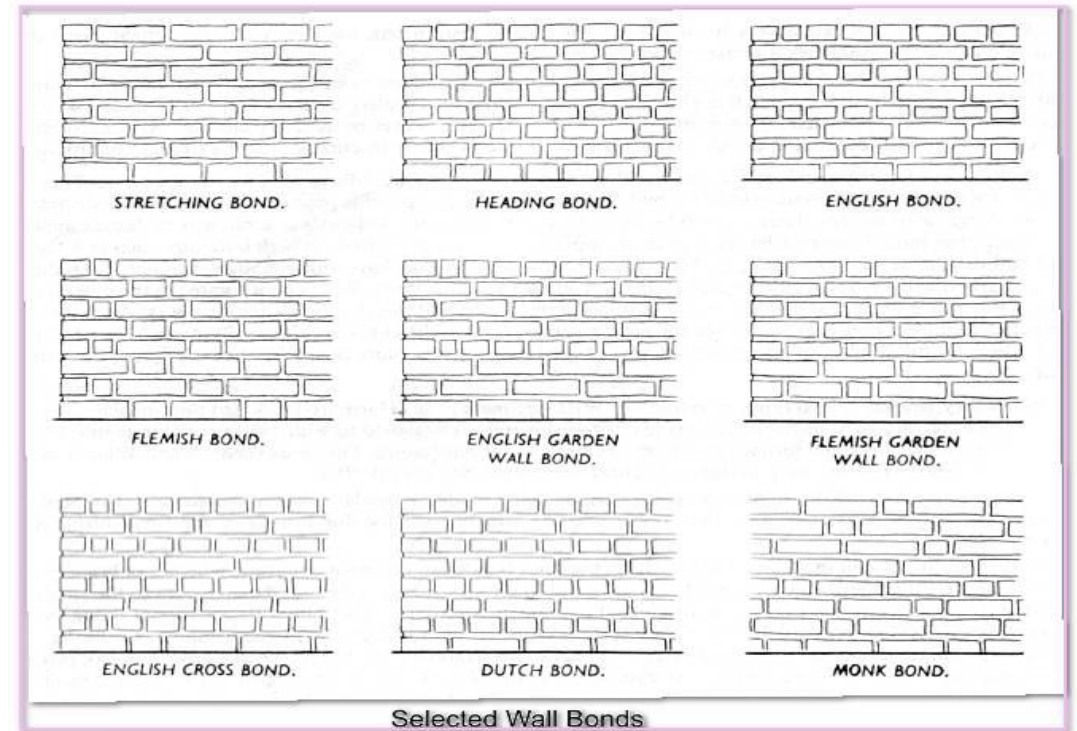
# Painting – Contractor SOW

- Remove loose or failing paint by thoroughly scraping all surfaces down to sound paint or bare wood, Lead Hazard!
- Sand to feather edges of scraped paint to ensure good adhesion of new paint, Lead Hazard!
- Clean surface to be painted and allow to dry thoroughly
- Prime all bare wood with oil-based primer. Or should I?
- Apply two topcoats
- Provide a warranty
- DO Not!
  - NO sandblasting • NO pressure washing at high pressures • DO NOT paint bare wood without priming first • DO NOT paint bare wood without checking moisture content • DO NOT paint without thorough surface preparation • DO NOT paint masonry or stone



# Masonry

- Why it matters
- What to look for
  - Cracks  $>1/16$  inch – vertical or stepping, settling
  - Leaks & condensation
  - Insects, termites, worms, ants
- Maintenance
  - Inspect regularly look for cracks, spalling, loose or damaged mortar. Repointing can usually be done as needed. Have your mortar analyzed and keep some handy, dry and secure.
  - Monitor cracks for change over time. Significant cracks may require a consult with structural engineer
  - Maintain appropriate landscaping – keep organic materials from getting close to the structure.
  - Ventilation of basement / crawlspace to prevent build of moisture
  - Understand the method of construction. 3 wythe wall vs. veneer. Different bond types: Flemish, American or common, English etc.



# Masonry Cleaning

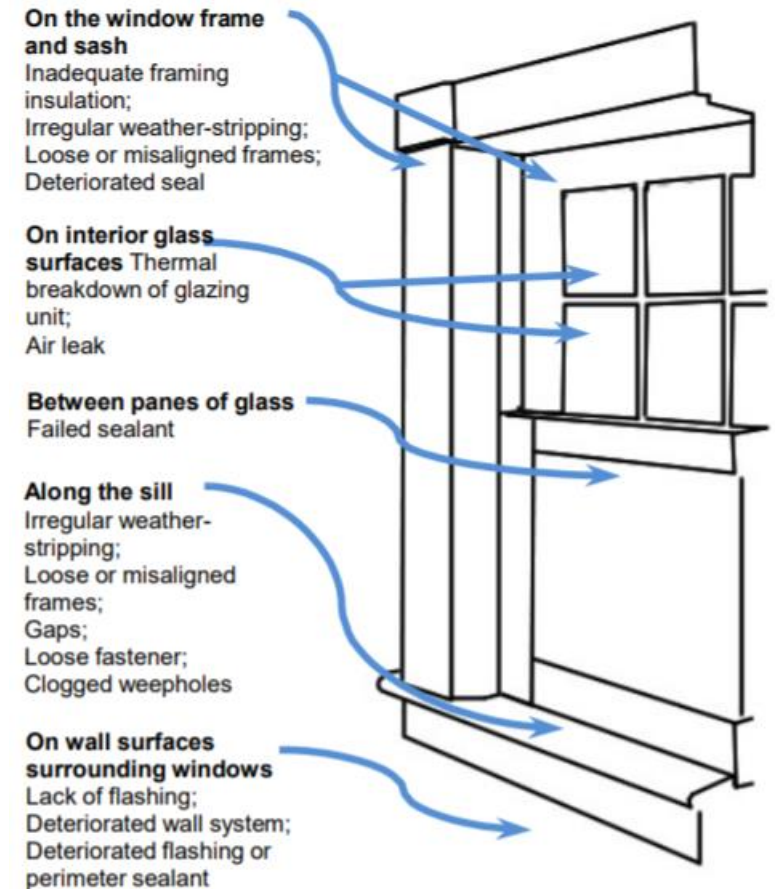
- Clean as needed
- Build up of dirt and growths can destroy brick, stone, and masonry over time.
- Ivy and wisteria are pretty but very damaging to masonry.
- Cleaning is critical before repairing damaged or deteriorated masonry.
- While masonry can be very durable some cleaning methods can cause irreparable damage!
- Gentlest means necessary:
  - Homeowner friendly
    - Water only
    - Water with detergent/No Bleach
  - Best left to professionals
    - Steam washing
    - Acidic and alkaline chemical cleaners
    - Paint, stain, and coating removers
- Masonry cleaning must be done in warm weather or damage may result
- And remember, No abrasive blasting!



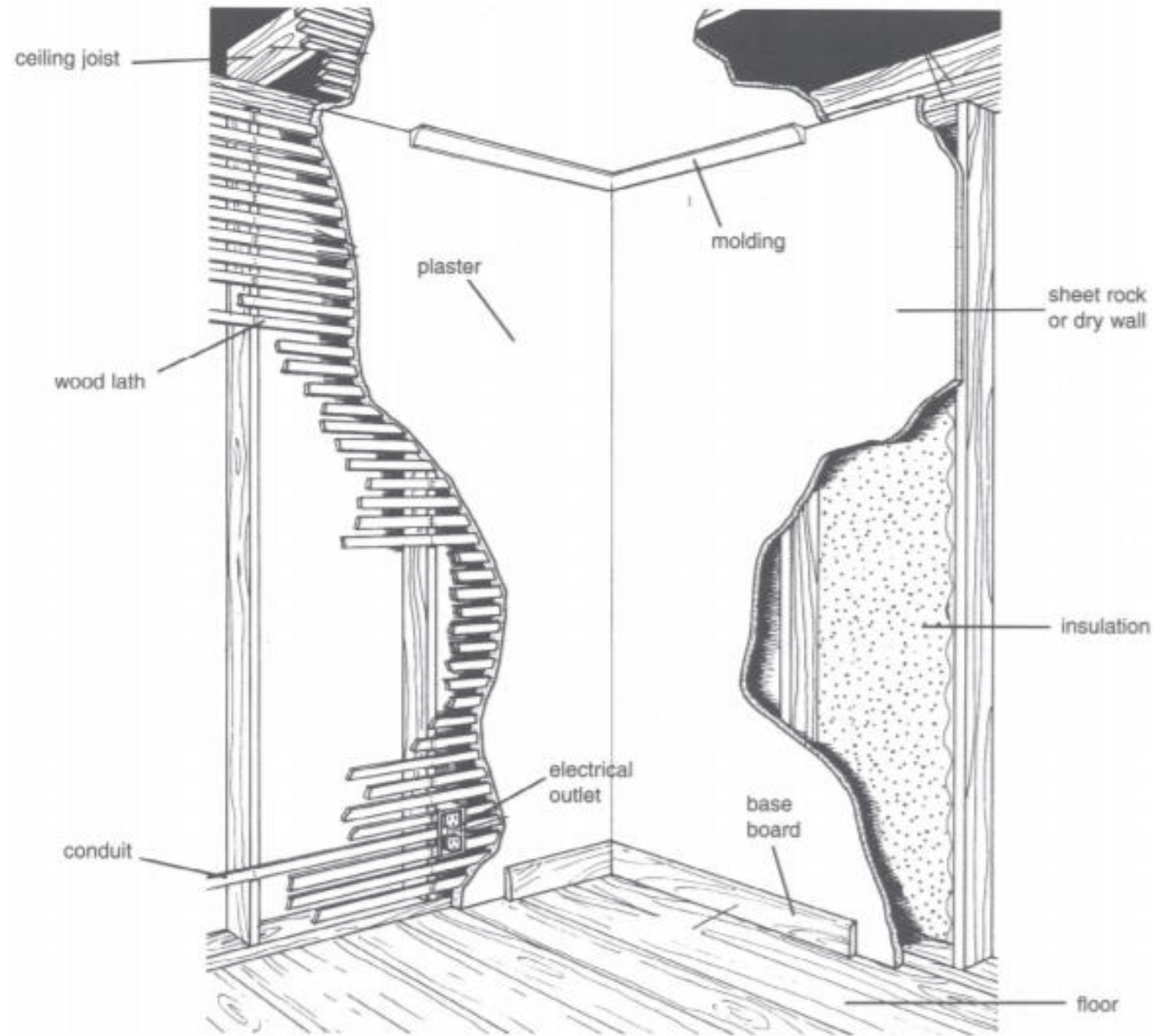
# Windows & Doors

- Deterioration
  - Moisture
  - Dirt & debris
  - Building movement
  - Weathering
  - Age
  - Improper/inadequate maintenance repair
  - Impacts
- Maintenance
  - Check sashes, sills, jambs and casing for soundness with your pocketknife. Lower edge of bottom sash rail and stiles, lower portion of jambs and casing tend to fail at joints and butts.
  - Check soundness of glazing putty and replace if needed. Pet peeve: Glazing is the glass or thin icing on a pastry. Putty is the substance keeping water out of your windows.
  - Check weather stripping for proper function
  - Check doors for proper function.
  - Check jambs and mouldings for deterioration
  - Front doors can take a beating before anybody notices. Check them spring and fall!

Why does water appear on a window?



# Interior



# Plaster, Floors and Decorative Finishes

- Interiors may give vital clues regarding exterior maintenance issues. We spend most of our time here and may notice things sooner.
- Water stains, peeling paint, failing or cracked plaster can all be signs of moisture problems
- Highly decorated interiors can be expensive to repair.
- Buckled floors and rust blooms can be signs of a damp basement
- Plaster cracks are not undue cause for alarm, but failure can indicate serious structural issues typically caused by water. Looking at you roof!



# Foundation and Grade

- Final stop for water runoff from the roof.
- Inspect your basement at least twice a year
- A damp basement will cause a host of problems throughout the house
- Can lead to failing interior finishes and serious structural problems
- Proper site drainage will lead water away from the building
- Water will damage foundations and footings over time leading to very expensive repairs
- Do not repair the associated damage before addressing the underlying cause. In this case poor drainage and a damp basement.
- Develop and comprehensive site drainage plan and monitor humidity levels carefully



# Resources

- Maine preservation Cyclical Maintenance plan template (see our website)
- Maintaining Your Historic Home: A Practical Guide for Homeowners, <https://www.delcopa.gov/planning/pubs/MaintainingYourHistoricHome.pdf>
- Georgia Trust Historic Preservation Handbook, The Fox Theatre Institute, 2012, [https://www.foxtheatre.org/assets/doc/Georgia\\_Historic\\_Preservation\\_Handbook-17f6129d73.pdf](https://www.foxtheatre.org/assets/doc/Georgia_Historic_Preservation_Handbook-17f6129d73.pdf)
- <https://digitalcommons.usm.maine.edu/cgi/viewcontent.cgi?article=1001&context=mhpc-docs>
- <http://heritageconsultinginc.com/images/images/Cyclical%20Maintenance%20Manual%20Bartrams%20Garden..pdf>
- <https://www.nps.gov/tps/how-to-preserve/briefs/47-maintaining-exterior.htm>
- <https://forum.savingplaces.org/HigherLogic/System/DownloadDocumentFile.ashx?DocumentFileKey=5188036a-cb32-b503-1eee-94fdb38212fa>

# Maintenance Checklist Templates

- [http://steamboatsprings.net/DocumentCenter/View/393/10-Hist Prop maint checklist?bidId=](http://steamboatsprings.net/DocumentCenter/View/393/10-Hist_Prop_maint_checklist?bidId=)
- <https://accd.vermont.gov/sites/accdnew/files/documents/Inspection%20Checklist%20for%20Historic%20Buildings.pdf>
- <https://www.historycolorado.org/universal-conservation-maintenance-plan>

## General Services Administration Publications:

- <https://www.gsa.gov/technical-procedures/checklist-routine-inspection-buildings>

## NPS Preservation Briefs:

- <https://www.nps.gov/tps/how-to-preserve/briefs.htm>



**Q & A**

# Upcoming Events

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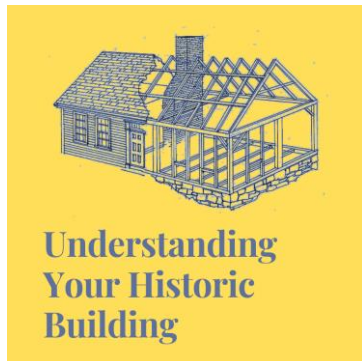


## Windows WOW!

Wednesday, September 23, 2020

4:00 PM 5:00 PM

Windows are critical to your enjoyment of your historic building. In this session, we'll talk about window repair, replacement, painting, show you how to fix those pesky weights on your sashes, and more!



## Historic Houses for Contemporary Lives with Scott Hanson

Wednesday, October 14, 2020

4:00 PM 5:00 PM

Scott Hanson author of the award-winning and best-selling book, *Restoring Your Historic House, The Comprehensive Guide for Homeowners* will talk about how to approach restoring a historic house in a way that identifies and preserves its most important character-defining features while making it livable for 21st century life.

Sign up: <https://www.mainepreservation.org/webinars-and-educational-programs>

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